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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

COUNTRY USSR

SUBJECT Higher Education in Field of Chemistry in USSR

NO. OF PAGES 4

PLACE ACQUIRED

25X1

NO. OF ENCLS. (LISTED BELOW)

DATE ACQUIRED

SUPPLEMENT TO REPORT NO.

DATE OF INFORMATION

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SELECTION OF STUDENTS

1. The methods utilized in the selection of students to institutions of higher education in the USSR changed from time to time. For example, during the years 1921 to 1925 those admitted had to have a suitable academic background (gymnasium, business school, etc).

2. From 1925 to 1930, the political factor was all important (Party or Komsomol membership). This covered the so-called "25 thousand" - people with meritorious service during the civil war or in the shock-campaigns conducted by the Communist Party; these persons were given an educational priority.

3. During the period from 1930 to 1935 the academic requirements were somewhat raised, but Party membership still entitled one to a priority.

4. Starting in 1935 the academic background began receiving attention and, after 1936, became the important factor in granting admission to an institution. Competitive entrance tests and special admission privileges for so-called "A-graders" (high school graduates with excellent marks) were introduced. This lasted but a short while, A-graders later being compelled to pass the entrance examination.

5. Priority was always given to Party and Komsomol members. Students who had "connections" with high ranking persons were also given the highest consideration. Another priority was granted to those of "proletarian origin", that is people from the worker-peasant class. However, one had to have legal papers to prove such a desirable proletarian background. Such papers were easily obtained, with the result that many non-proletarians furnished themselves with them. Later on the true identities of some of these non-proletarians were revealed, with the result that they were expelled from the institutions they

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were attending, despite, in many cases, outstanding academic records.

6. Scholastic achievements prior to entrance into universities and institutes, were important only during the so-called "A-grader" period. The entrance examinations, which encompassed both the academic and political, became all important. Such examinations gave the authorities the opportunity to learn all they could about the applicant and weed out so-called "undesirables".

7. Monetary requirements were negligible up until 1941, for there were no well-to-do people as such. Therefore, in order to educate cadres in various fields it was necessary to grant the students "scholarships" which provided living quarters, cash money and free access to the books of their respective school libraries. A "desirable class-origin", that is, a proletarian background of parents, grandparents and other relatives, was much more important than money.

8. A very thorough selection program, based on the principle of "desirable proletarian origin", was used in all technical institutes. Admission to technical institutes ("V.U.Z." - institution of higher education) was most sought after. Therefore, an applicant with an approved proletarian background always chose the technical institute. The "alien", or one with a non-proletarian background, had no choice and had to go to the less desirable schools.

TEXTBOOKS

9. Technical books in the libraries of the various institutions were adequate and of a good quality. Some were old editions, but new books were gradually replacing them, bringing the texts up to date. The sources of these new books were both foreign and domestic, foreign books being translated from the foreign language (usually German). There were sufficient problems, examples and illustrations in the technical books to get by on.

10. Textbooks on social and economic subjects were quite a problem. Confusion and inaccuracies were frequent. Ideas and theories considered correct and true one year would be discarded and declared wrong the next. It all depended upon the policies at the Kremlin at a given moment.

QUALITY AND METHODS OF PRESENTATION OF CHEMISTRY

11. Basically, the quality of presentation depended upon the instructor; some were good, some bad, some indifferent. Generally, it was good.

12. The number of students admitted each year to various schools differed. Some schools admitted as many as one thousand; others, 100 to 200 only. All students, however, were divided into groups of 20, 25 or 30 for laboratory work. For theoretical lectures, the whole class would be gathered in auditoriums. This method assisted good presentation.

13. Students received instruction six hours a day, six days a week. Each small group had one instructor assigned to it. There was no individual training or tutoring, but so-called "consultation" with instructors was provided, (depending upon the whim of the instructor). There were sufficient training aids such as slides, movies, models, etc. A post-graduate student, after gaining enough experience, would be permitted to supervise laboratory work; if outstanding, he could sometimes lecture. All instructors, whether willing or not, had to show an interest in their work or suffer dismissal.

14. The requirements of certain industries were reflected in various courses. Since students, upon graduation, were sent wherever needed, there were no area demands as such; only industrial.

QUALITY OF LABORATORY INSTRUCTION AND FACILITIES

15. As pointed out above, there were between 20 and 30 students in each laboratory group. They received instruction in accordance with the general requirements of any given course and the specific requirements of each separate theme. Graduate assistants assigned to laboratory work were usually outstanding men. Equipment was adequate but could have been improved upon. The scope and extent of laboratory reports depended upon the minimum requirements of the course and the individual qualities of the instructor, which varied. The amount of individual work and group demonstrations depended upon the limits of the course, which were adequate in most cases. There was no training for the average student on a pilot plant scale. Some outstanding students did receive training in unit processes. All students had a required period of general industrial practice. The time allotted for inorganic chemistry was 240 to 300 hours; organic chemistry, 120 to 200 hours; analytical chemistry, 120 to 180 hours; physical chemistry, 80 to 120 hours.

EXAMINATION SYSTEM

16. Both oral and written examinations were used; laboratory experimental work was checked and graded as completed. Examinations were given at the end of each semester or annually, depending on the course, and covered the entire subject. Tests were standardized and no favoritism was permitted (after 1938). Of course there were the usual allowances made for Party members at the request of various political committees. A five-grade marking system was used. The overall annual or semester examinations carried the most weight for they were most specific; the pre-graduation examinations covered a broad theme.

EMPLOYMENT OF LEADING SCIENTISTS IN EDUCATION *

17. Many outstanding scientists were engaged in teaching both under-graduate and post-graduate students. For example, a course in Botany was given by Academic. Komarov; a course in Physics by Academic. Vavilov. Both were presidents of the Academy of Sciences. Others included Academic. Ukhtomskiy; member-correspondent Sukachev; Academic. Kablukov; Academic. Mikhailov; Academic. Alekseev; member-correspondent Pryanishnikov; member-correspondent Dumanskiy.

18. The amount of time spent by outstanding scientists on individual research is difficult to estimate. [redacted] some would allot but one hour a day to work on a certain problem. Then again there were those who would work continuously for two or three days in a row. One hard working scientist named Samuful died from complications brought on by overwork. The same was true of work on industrial problems. Here, however, the work was usually supervised and coordinated by a Party or NKVD official. Some scientists servedas consultants to highly placed Party or government officials.

19. The average leading scientist devoted two to three hours a week to teaching. He gave more time to post-graduate students in the form of consultations.

25X1 WORK ON RESEARCH AND THESES

25X1 20. Research problems usually were assigned by the professor in charge of the department. The time allowed each student was determined by the nature of the problem. Work on a thesis was begun during the second or third year in school and the dissertation had to be completed by the time of graduation. The work was usually directed toward suggestions for the improvement of current industrial processes and the search for new methods. Some themes were academic, others practical.

21. Theses were not usually published, but were recorded in special bulletins. If it was not classified as secret, it was usually presented for public discussion at which time the supervising professor and opponents (official and non-official) had to be present. Theses with negative results were turned down. Research reports included theoretical explanation, technical estimates, plans, diagrams, etc.

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GRADUATION REQUIREMENTS

22. Other than the usual requirements of a passing mark, a candidate for a degree of doctor had to prepare a written scientific research work (or works) which had to be publicly defended or else submitted for approval to a special commission of the Committee for the College Affairs. The special courses leading toward an academic degree eliminated any time requirements, or grades, as such. All scientific work was under the influence of political ideologies. However, such influence was artificial, as for example, references to Stalin or the Party.

FAILURES AND INCOMPLETIONS

23. There were always failures. Anyone who failed a course (or courses) could retake it or become a "free listener". If the failure was made up it meant little difference to the student's future.

GRADUATE ASSIGNMENTS

24. The Ministry of the industry covering the technical field in which the student had graduated assigned him to a specific job or to an area for further assignment. These assignments varied from administrative positions, such as a director or vice-director, to a specific job in a plant. Party members usually got the administrative posts while non-members were used directly in the factory.

25. If a post graduate desired to continue his education he had to be outstanding in his work. If so, he could usually be transferred to another institution of his own choice, all other things being equal. A prescribed set of courses and training was set up, along with suitable textbooks, for those given such opportunities of furthering their education to enable them to keep pace with technical advancements.

*

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